We claim:

A purified mammalian dihydrogaabain-like factor (Dh-OLF) having binding reactivity with antibody raised against plant-related dihydroouabain.

The factor of claim 1 having a high pressure liquid chromatography elution pattern similar to dho.

The factor of Alaim 1 lacking substantial binding reactivity with the antibody 3. raised to plant-derived ouabain or mammalian ouabain-like sodium pump inhibitory factor (OLF).

The factor of claim 1 having 10-fold lower potency than OLF and 3-fold higher 4. potency than dho for inhibiting sodium pump activity.

5. The factor of claim 1 which is of human origin.

The factor of claim 1 which is of bovine origin. 6.

The factor of claim 1 which is obtained by reduction of OLF. 7.

A pharmaceutical composition comprising the mammalian Dh-OLF factor of 8. claim 1 and a pharmaceutically or veterinarily acceptable carrier.

- The composition of claim 8 in the form of a formulation selected from the group 9. consisting of oral, parenteral, ophthalmic, slow release and enteric coating formulations.
- A method of prophylactically or therapeutically treating a condition associated 10. with higher than normal sodium pump activity, comprising administering to a subject in need of the treatment an effective amount of the composition of claim 8.

- 11. The method of claim 10 wherein the composition is administered parenterally.
- 12. The method of claim 10 wherein the composition is administered orally.
- 13. The method of claim 10 wherein the composition is administered in an amount of about 1 μ g/kg to about 1.5 mg/kg body weight.
- 14. The method of claim 11 wherein the subject is human.
- 15. The method of claim (11) wherein the disease or condition is heart disease, and the composition is administered in an effective amount.
- 16. The method of claim 16 wherein the heart disease is congestive heart failure.
- 17. The method of claim 11 where in the disease or condition is hypertension, and the composition is administered in an effective amount.
- 18. The method of claim 17 wherein the hypertension is selected from the group consisting of essential hypertension, thyroidism-induced hypertension, and pregnancy-induced or pregnancy-associated hypertension.
- 19. The method of claim 10 wherein the disease or condition is cataracts, and the composition is administered in an effective amount.
- 20. The method of claim 10 wherein the disease or condition is Alzheimer's disease, and the composition is administered in an effective amount.
- 21. A binding agent having affinity for the factor of claim 1.
- 22. The binding agent of claim 21 selected from the group consisting of polyclonal

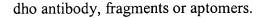
antibodies, monoclonal antibodies, F_v fragments and aptomers.

- 23. A pharmaceutic composition comprising the binding agent of claim 22 and a pharmaceutically or veterinarily acceptable carrier.
- 24. A method of prophylactically or therapeutically treating a condition associated with higher than normal OLF or DhOLF levels comprising administering to a subject in need of the treatment an effective amount of the composition of claim 23.
- 25. The method of claim 24, wherein the antibody is administered in an amount of about 0.1 to about 1000 μmol/kg body weight.
- 26. The method of claim 24 wherein the subject is human.
- 27. A quantitative method of detecting Dh-OLF in an animal sample, comprising obtaining a test sample suspected of comprising Dh-OLF analyte;

contacting the test sample with a solid substrate-bound first binding agent having specificity for Dh-OLF or for dho isomer mixture but not for OLF, under conditions effective for said first binding agent to bind any analyte present in the sample and form binding agent-analyte complex(es);

contacting the substrate-bound first binding agent-analyte complex(es) with a labeled second binding agent specific to the first binding agent, under conditions effective to bind to any substrate-bound analyte-first agent to form a solid substrate-bound analyte-anti-Dh-OLF binding agent- second-binding agent or analyte-anti-dho binding agent-second binding agent labeled complex(es);

- detecting the amount of solid substrate-bound label; and comparing that amount of complex(es) to the amount of complex(es) obtained for a known amount of a standard Dh-OLF or dho under the same or similar conditions.
- 28. The method of claim 26 wherein the binding agent comprises anti-Dh-OLF, anti-



- 29. The method of claim 26 wherein the subject is human.
- 30. A quantitative method of detecting Dh-OLF in an animal sample comprising isolating Dh-OLF by HPLC and comparing the height of the peak characteristic of Dh-OLF to that of a known amount of dho-B separated in the same or similar manner.
- 31. The method of claim 30 wherein the sample is taken from a human.
- 32. A purified plant-related dho isomer.
- 33. The isomer of claim 32 that is dho-A.
- 34. The isomer of claim 32 that is dho-B.